

## *Jekelius (Jekelius) klichai* nov. sp., a new species from Spain (Coleoptera: Geotrupidae: Geotrupinae)

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**Abstract:** *Jekelius (Jekelius) klichai* nov. sp. (Coleoptera: Geotrupidae: Geotrupinae) is described from Spain. Differences with the related species are discussed. *Jekelius (Jekelius) klichai* nov. sp. is a species very close to *Jekelius (Jekelius) hernandezi* (López-Colón, 1988), although both are clearly distinguished by the male's protibia and the aedeagus.

**Key words:** Coleoptera, Geotrupidae, *Jekelius (Jekelius) klichai* nov. sp., description, taxonomy, distribution, Spain.

**Resumen:** *Jekelius (Jekelius) klichai* nov. sp., nueva especie de España (Coleoptera: Geotrupidae: Geotrupinae). Se describe *Jekelius (Jekelius) klichai* nov. sp. (Coleoptera: Geotrupidae: Geotrupinae) de España. Se discuten las diferencias con las especies próximas. *Jekelius (Jekelius) klichai* nov. sp. es una especie próxima a *Jekelius (Jekelius) hernandezi* (López-Colón, 1988), aunque ambas se distinguen claramente por la protibia del macho y el edeago.

**Palabras clave:** Coleoptera, Geotrupidae, *Jekelius (Jekelius) klichai* nov. sp., descripción, taxonomía, distribución, Spain.

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### Introduction

The genus *Jekelius* López-Colón, 1989 comprises 28 species with a circum-Mediterranean distribution, although one taxon reaches Asia Minor (see Annex I) (BARAUD, 1992; LÓPEZ-COLÓN, 1992, 1996, 2000, 2003, 2004; LÓPEZ-COLÓN & BAHILLO DE LA PUEBLA, 2023, 2024a, b; SOMMER et al., 2025). It is divided into three subgenera: *Jekelius sensu stricto*, *Rudolfpetrovitzia* Rey & López-Colón, 2003 and *Reitterius* López-Colón, 1996. The 17 Ibero-Balearic species belong to the subgenus *Jekelius*, being all of them convex, medium-sized, black with more or less weak lateral metallic tones, which in some cases extends to the elytra and pronotum, and disappearing in others completely; among them, *Jekelius balearicus* (López-Colón, 1984) is exclusive to the Balearic Islands, and *Jekelius intermedius* (Costa, 1839), that also reaches these islands, but not the Iberian Peninsula despite its wide Mediterranean distribution (BARAUD, 1992; LÓPEZ-COLÓN & ROMERO SAMPER, 1996; LÓPEZ-COLÓN, 2000, 2003, 2004; NIKOLAJEV et al., 2016; HUCHET et al., 2020; LÓPEZ-COLÓN & BAHILLO DE LA PUEBLA, 2023, 2024a, b).

The Ibero-Balearic *Jekelius* are characterized externally by their clypeus always semicircular, not flattened at the front; upper edge of the mandible straight and entire; elytral stippling fine or very fine, scarce, more or less aligned in striations; apical tooth of male's anterior tibia bifurcated; and posterior edge of the metafemora entire.

## Material and methods

To obtain the images that accompany this paper, serial photographs were taken at different focus planes using a Meopta laboratory microscope and a CMOS 5 digital camera. The photographs were subsequently stacked with Helicon Focus 8.2 software.

The material studied has been labelled as follows:

- **Holotypus:** 1 ♂, White label: Spain, 23-31-X-2015 / Kylies lgt./ Santiago de la Espada env. Red label: *Jekelius klichai* ♂ / Kylies, Pucholt, López-Colón & Bahillo de la Puebla, Holotypus. The specimen is deposited in the Collection of Entomology of Museo Nacional de Ciencias Naturales-CSIC (Madrid).
- **Allotypus:** 1 ♀, White label: Spain, 19-25-III-2024 / Kylies, Pucholt lgt./ Santiago de la Espada env. (Jaén). 1500 m. Red label: *Jekelius klichai* / Kylies, Pucholt, López-Colón & Bahillo de la Puebla, Allotypus. The specimen is deposited in the Collection of Entomology of Museo Nacional de Ciencias Naturales-CSIC (Madrid).
- **Paratypi:** 53 ♂♂ and 66 ♀♀. All the specimens are kept in the collections of Petr Kylies, Pavel Pucholt, Jiří Kliča and Martin Mařík:
  - 4 ♂♂ and 5 ♀♀, White label: Spain, 6-12-IV-2025 / Kylies, Pucholt lgt./ Santiago de la Espada env. (Jaén). 1500 m. Red label: *Jekelius klichai* / Kylies, Pucholt, López-Colón & Bahillo de la Puebla, Paratypus.
  - 25 ♂♂ and 31 ♀♀, White label: Spain, 19-25-III-2024 / Kylies, Pucholt lgt./ Santiago de la Espada env. (Jaén). 1500 m. Red label: *Jekelius klichai* / Kylies, Pucholt, López-Colón & Bahillo de la Puebla, Paratypus.
  - 2 ♂♂ and 4 ♀♀. White label: Spain, 4-V-2017 / Martin Mařík lgt./ Santiago de la Espada env. (Jaén). 1500 m. Red label: *Jekelius klichai* / Kylies, Pucholt, López-Colón & Bahillo de la Puebla, Paratypus.
  - 3 ♂♂ and 1 ♀, White label: Spain, 9-V-2025 / Jiří Kliča lgt./ Santiago de la Espada env. (Jaén). 1500 m. Red label: *Jekelius klichai* / Kylies, Pucholt, López-Colón & Bahillo de la Puebla, Paratypus.
  - 6 ♂♂ and 4 ♀♀, White label: Spain, 23-31-X-2015 / Kylies, Pucholt lgt./ 10 km N Puebla de Don Fadrique (Granada): *Jekelius klichai* / Kylies, Pucholt, López-Colón & Bahillo de la Puebla, Paratypus.
  - 8 ♂♂ and 6 ♀♀. White label: Spain, 6-12-IV-2025 / Kylies, Pucholt lgt./ 10 km N Puebla de Don Fadrique (Granada): *Jekelius klichai* / Kylies, Pucholt, López-Colón & Bahillo de la Puebla, Paratypus.
  - 4 ♂♂ and 12 ♀♀. White label: Spain, 9-V-2025 / Martin Mařík lgt./ 10 km N Puebla de Don Fadrique (Granada): *Jekelius klichai* / Kylies, Pucholt, López-Colón & Bahillo de la Puebla, Paratypus.
  - 1 ♂ and 3 ♀♀. White label: Spain, 8-XI-2023 / Martin Mařík lgt./ Cañada de la Cruz (Moratalla, Murcia): *Jekelius klichai* / Kylies, Pucholt, López-Colón & Bahillo de la Puebla, Paratypus.

## Description

### *Jekelius (Jekelius) klichai* nov. sp.

#### Holotypus

Total length: 15,2 mm. Convex and broad, black in colour, shiny, without bluish lateral reflections (Figs. 1-3). Cephalic tubercle conical, strong and fairly elevated; clypeus densely dotted; prominent cheeks; upper edge of mandibles not sinuate (Figs. 4-6). Antenna as in Fig. 7.

Pronotum large, convex and transverse, without a median depression on the anterior margin; anterior angle straight but not more than 90°; posterior angle very rounded; base with an interrupted ridge on each side of the middle; very dense, double punctation all over its surface, in both males and females (Figs. 8-9).

Small triangular, transverse scutellum, twice as wide as long, without punctation but usually with longitudinal wrinkles (Fig. 8).

Elytra fused, with punctations weak but visible, aligned; anterior angle sunken, concave (Fig. 9).

Mesosternal process rounded, elevated, clearly evident.

Mesosternum, ♂ as in Fig. 10 and ♀ as in Fig. 11.

Abdominal sternites punctated, with a lot of hairiness (Figs. 12-13).

Pygidium densely hairy, with black and prostrate hairs.

Brachypterous. Wings reduced, 2,31 mm long (Fig. 14).

Pro- and mesofemora with unarmed anterior and posterior margins. Unarmed metafemora, without denticulation on the posterior margin. All of them have a slightly marked, hairy, dotted posterior line.

Protibiae with the apical tooth bifurcated in the male; the third external tooth thickened inwards; the ventral surface completely unarmed, concave, while the denticulation of the lower internal ridge presents a very strong tooth, not aligned with those of that crest but located further inwards on the lower face (Fig. 15), at the level of the third external tooth; there are also three other teeth, much smaller but well defined, located at the base, opposite the corresponding external teeth (Fig. 16).

Metatibiae, as in Fig. 18.

Aedeagus: Length: 3.65 mm. Relatively short. Slightly widened towards the middle, at the level of the basal region of the parameres; no obvious central notch on the dorsal surface of the phallobase. The dorsal basal arch of the parameres is very narrow in the middle and barely distinct on either side of the middle, appearing to be continuous. Parameres with well-developed desclerifications on the mediodorsal margins (Fig. 19).

#### Allotypus

Female. Total length: 16,0 mm. Similar to the male, but with the anterior tibiae of a different shape. Anterior tibiae with a simple, non-bifurcated apical tooth; the third external tooth in the same plane as the others, not thickened; the ventral surface is completely unarmed, concave, while the denticulation of the lower internal ridge also has a series of teeth, some relatively large, but in any case smaller than those of the males (Fig. 17).

#### Variation of the length

Total length of Paratypes: 53 ♂♂: 12,0 - 18,0 mm; 66 ♀♀: 12,0 - 18,0 mm. (however, females are usually larger).

#### Etimology / Derivatio nominis

Dedicated to the entomologist Jiří Kliča, a colleague of the first author, who collected with her the first specimens back in 2015 and again in 2025.

## Discussion

The closest species to *Jekelius (Jekelius) klichai* nov. sp. is *Jekelius (Jekelius) hernandezi* (López-Colón, 1988), although both species are clearly distinguished by the male's anterior tibia and the aedeagus. Both belong to the "intermedius" group with the following characteristics:

- Male's protibiae with the third external tooth thickened and directed downwards in a different plane than the others.
- Male's protibiae with a very weak ventral keel applied towards the denticles of the lower-internal margin.
- Abdominal setae denser.
- Anterior angles of the pronotum obtuse.
- Aedeagus with the dorsal basal arch not thickened in the middle.

**Key to the identification of *Jekelius (Jekelius) hernandezi* (López-Colón, 1988) and *Jekelius (Jekelius) klichai* n. sp.**

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <p>1 Fore tibiae of the male with the third external tooth thickened and directed downwards, on a different plane than the others, not extended inwards. Elytra with rather weak and barely apparent stippling, with interrupted, partially erased striations, not being unusual for them to have transverse wrinkles. Mediodorsal sclerotization of the right paramere, much more atrophied than that of the left. Dorsal basal arch with a notch towards the left side at its base.....</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <p><i>Jekelius (Jekelius) hernandezi</i><br/>(López-Colón, 1988)<br/>(Iberian Peninsula: Spain).</p> |
| <p>1' Fore tibiae of male with the third external tooth thickened inwards; the ventral surface concave, with a very weak ventral keel applied towards the denticles of the lower-internal margin. The denticulation of the lower internal ridge presents a very strong tooth, not aligned with those of that crest but located further inwards on the lower face, at the level of the third external tooth; there are also three other teeth, much smaller but well defined, located at the base, opposite the corresponding external teeth. Elytra with well-marked striae. Aedeagus relatively short, slightly widened towards the middle, at the level of the basal region of the parameres; no obvious central notch on the dorsal surface of the phallobase. The dorsal basal arch of the parameres is very narrow in the middle and barely distinct on either side of the middle, appearing to be continuous. Parameres with well-developed desclerifications on the mediodorsal margins.....</p> | <p><i>Jekelius (Jekelius) klichai</i> n. sp.<br/>(Iberian Peninsula: Spain).</p>                     |

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1

Fig. 1-3.- *Jekelius (Jekelius) klichai* n. sp. Habitus, male (Paratypus) (dorsal view) (scale: 5 mm).

Figs. 2-3.- *Jekelius (Jekelius) klichai* n. sp.

2.- Habitus, male (Paratypus) (ventral view) (scale: 5 mm).

3.- Habitus, female (Paratypus) (ventral view) (scale: 5 mm).



2



3





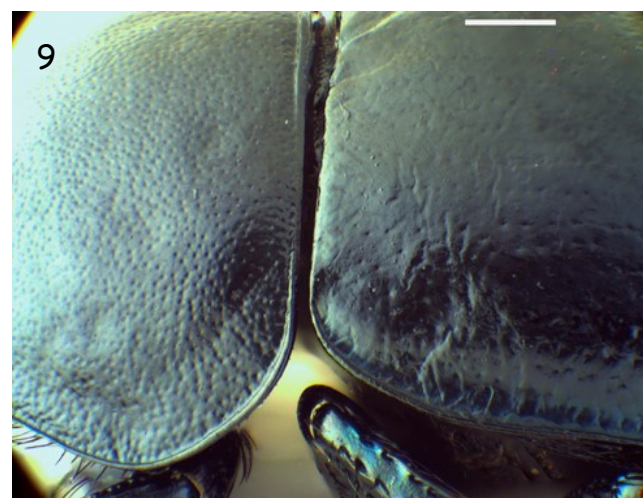
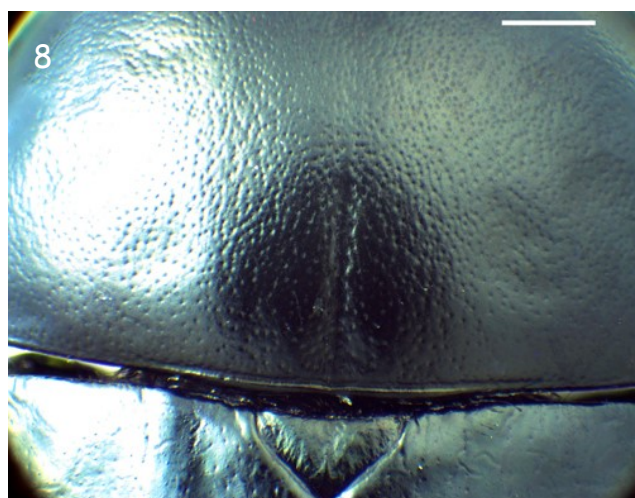
Figs. 4-7. - *Jekelius (Jekelius) klichai* n. sp.

4. - Head, male (Paratypus) (dorsal view) (scale: 1 mm).

5. - Head, male (Paratypus) (ventral view) (scale: 1 mm).

6. - Head, female (Paratypus) (dorsal view) (scale: 1 mm).

7. - Antenna, male (Paratypus) (ventral view) (scale: 1 mm).

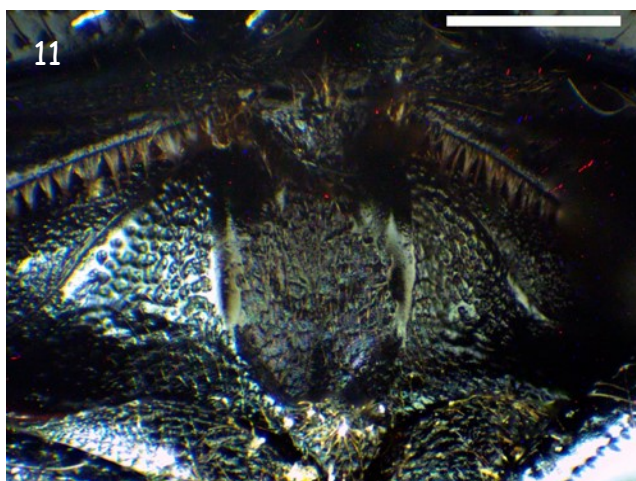
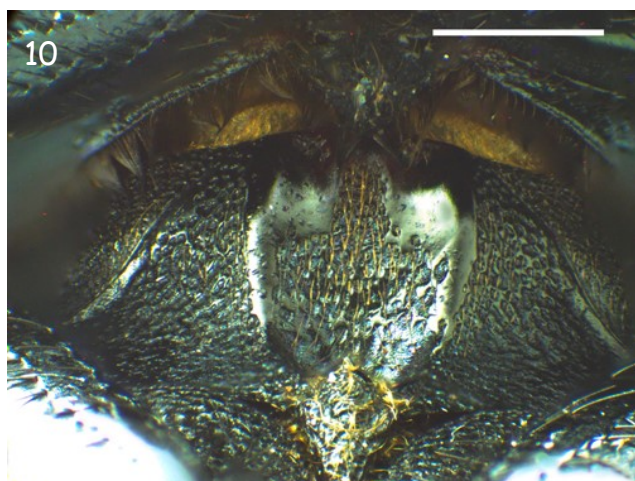


Figs. 8-9. - *Jekelius (Jekelius) klichai* n. sp.

8. - Scutellum, posterior angle of the pronotum and anterior angle of the elytra, male (Paratypus) (scale: 1 mm).

9. - Posterior angle of the elytra and anterior angle of the elytra, male (Paratypus) (lateral view) (scale: 1 mm).





Figs. 10–11. – *Jekelius (Jekelius) klichai* n. sp.

10. – Mesosternum, male (Paratype) (scale: 1 mm).

11. – Mesosternum, female (Paratype) (scale: 1 mm).



Figs. 12–13. – *Jekelius (Jekelius) klichai* n. sp.

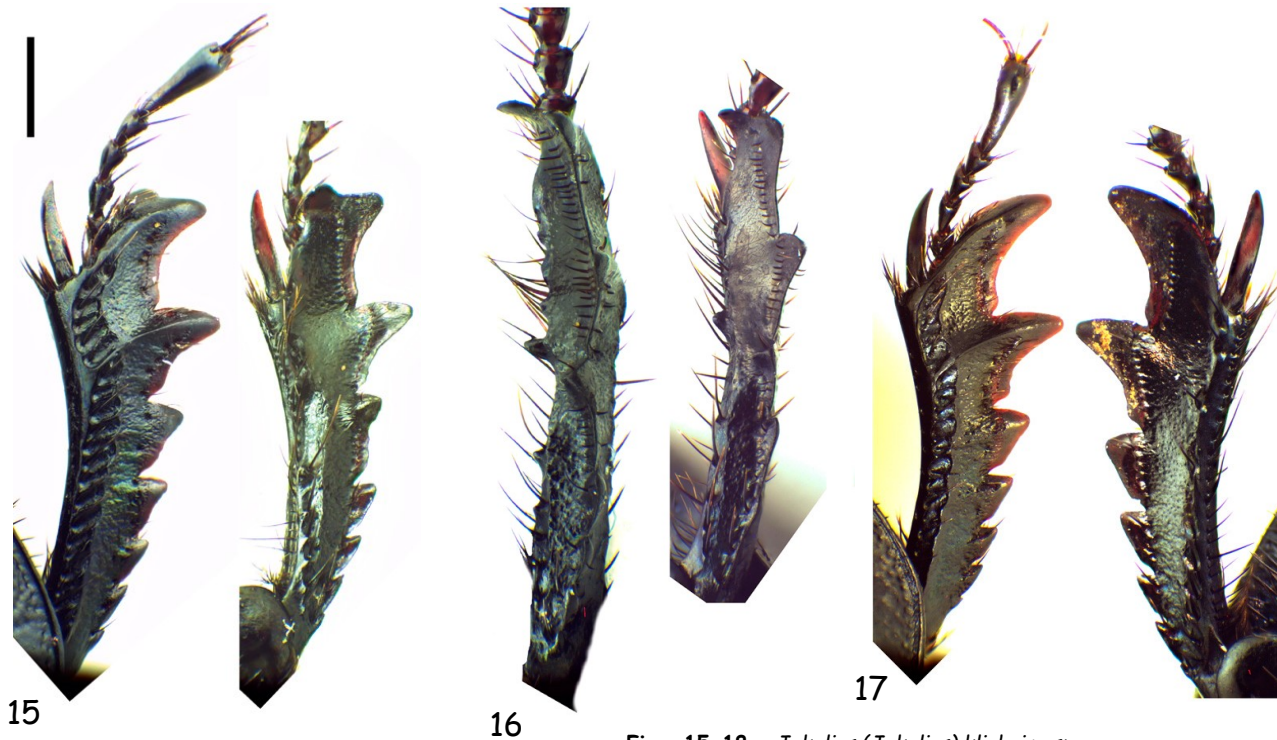
12. – Abdominal sternites, male (Paratype) (scale: 1 mm).

13. – Abdominal sternites, female (Paratype) (scale: 1 mm).



Figs. 14. – *Jekelius (Jekelius) klichai* n. sp. Atrophied wing, female (Paratype) (scale: 1 mm).





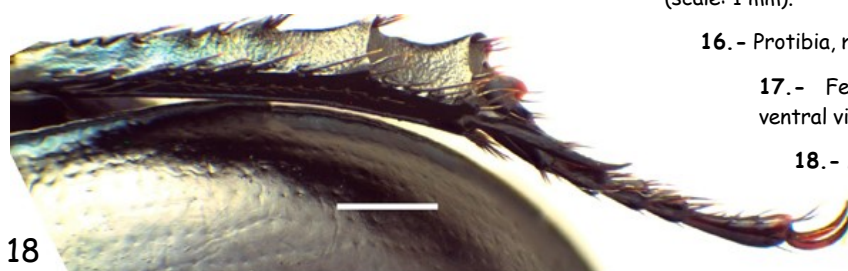
Figs. 15-18. - *Jekelius (Jekelius) klichai* n. sp.

15. - Anterior tibia, male (Paratypus) (dorsal and ventral view) (scale: 1 mm).

16. - Protibia, male (Paratypus) (lateral view) (scale: 1 mm).

17. - Female's protibia (Paratypus) (dorsal and ventral view) (scale: 1 mm).

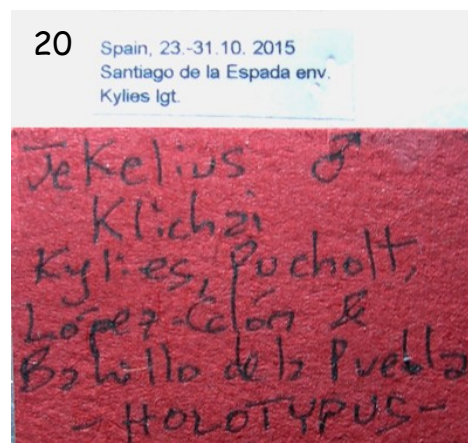
18. - Metatibia, female (Paratypus) (scale: 1 mm).



Figs. 19-20. - *Jekelius (Jekelius) klichai* n. sp.

19. - Aedeagus (Paratypus) (dorsal, lateral and ventral view) (scale: 1 mm).

20. - Original labels (Holotypus).



**Annex 1.** – Catalogue of the species of *Jekelius* López-Colón, 1989 and their geographical distribution.

*Jekelius (Jekelius) López-Colón, 1989*

- *Jekelius (Jekelius) albarracinus* (Wagner, 1928) (Spain)
- *Jekelius (Jekelius) ameliae* López-Colón & Bahillo de la Puebla, 2023 (Spain)
- *Jekelius (Jekelius) bahilloi* López-Colón, 2018 (Spain)
- *Jekelius (Jekelius) balearicus* (López-Colón, 1984) (Spain: Mallorca)
- *Jekelius (Jekelius) bargylus* Sommer, Hillert & Král, 2025 (Syria)
- *Jekelius (Jekelius) brullei africanus* (Baraud, 1965) (Algeria; Libya; Tunisia)
- *Jekelius (Jekelius) brullei anatolicus* (Jekel, 1866) (Greece; Turkey)
- *Jekelius (Jekelius) brullei brullei* (Jekel, 1866) (Albania; Bosnia-Herzegovina; Croatia; Greece; Italy; Montenegro; Slovenia)
- *Jekelius (Jekelius) brullei creticus* (Fairmaire, 1876) (Greece: Crete)
- *Jekelius (Jekelius) castillanus* (López-Colón, 1985) (Spain)
- *Jekelius (Jekelius) catalonicus* (López-Colón, 1991) (Spain)
- *Jekelius (Jekelius) chalconotus* (Chevrolat, 1840) (Portugal)
- *Jekelius (Jekelius) chersinus* (J.-J. Delabie, 1954) (France; Spain)
- *Jekelius (Jekelius) hernandezi* (López-Colón, 1988) (Spain)
- *Jekelius (Jekelius) hispanus* (Reitter, 1982) (Portugal; Spain)
- *Jekelius (Jekelius) impavidus* Sommer, Hillert & Král, 2025 (Israel)
- *Jekelius (Jekelius) intermedius* (O.G. Costa, 1827) (France; Italy; Spain: Menorca; Algeria; Tunisia)
- *Jekelius (Jekelius) jeannei* Huchet, Sommer, Hillert & Král, 2020 (Turkey)
- *Jekelius (Jekelius) juengeri* (Romero-Samper, 1996) (Spain)
- *Jekelius (Jekelius) klichai* n. sp. (Spain)
- *Jekelius (Jekelius) lemairei* López-Colón & Bahillo de la Puebla, 2024 (Spain)
- *Jekelius (Jekelius) luciae* Sommer, Hillert & Král, 2025 (Jordan)
- *Jekelius (Jekelius) nitidus* (Jekel, 1866) (Portugal; Spain)
- *Jekelius (Jekelius) paulae* López-Colón & Bahillo de la Puebla, 2024 (Spain)
- *Jekelius (Jekelius) pertinax* Sommer, Hillert & Král, 2025 (Lebanon; Syria)
- *Jekelius (Jekelius) punctatolineatus* (François, 1904) (Spain)
- *Jekelius (Jekelius) sardous* (Erichson, 1847) (France: Corsica; Italy: Sardinia)
- *Jekelius (Jekelius) sericeus* (Jekel, 1866) (France)
- *Jekelius (Jekelius) syriacus* (Jekel, 1866) (Israel; Jordan; Syria)

*Jekelius (Reitterius) López-Colón, 1996*

- *Jekelius (Reitterius) punctulatus* (Jekel, 1866) (Albania; Bosnia-Herzegovina; Bulgaria; Greece; Kosovo; Macedonia; Serbia)

*Jekelius (Rudolfpetrovitzia) A. Rey & López-Colón, 2003*

- *Jekelius (Rudolfpetrovitzia) marginatus* (Poiret, 1787) (Italy: Sicily; Algeria; Morocco; Tunisia)